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APPLICATION OF NEUTRON-BASED NDA TECHNIQUES AT LAWRENCE LIVERMORE NATIONAL LABORATORY'S NUCLEAR MATERIALS FACILITY

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Abstract: Lawrence Livermore National Laboratory has acquired a suite of instruments for performing neutron detection to improve its ability to measure items in its nuclear material inventory. This talk will focus on implementing state-of-the art neutron techniques for assaying Plutonium, Uranium and mixtures of these two elements using a Passive-Active Neutron Shuffler, an Active Well Coincidence Counter and a Neutron Multiplicity Counter, including the use of both passive and active neutron multiplicity counting. Particular attention is devoted to results that have been obtained by measuring a collection of items in each of these three instruments and on interpreting these results and comparing the performance of the three instruments.

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